ABSTRACT

A method of fabricating a thin-film compound solar cell having an n-type buffer layer formed therein for providing a heterojunction with a p-type compound semiconductor light absorbing layer formed on a back electrode by applying a chemical bath deposition (CBD) process using an aqueous solution for dipping the light absorbing layer to deposit particles on the surface thereof. In this process, the temperature of the solution is controlled from low to high to increase sizes of the particles to be deposited on the light absorbing layer so as to form the buffer layer which possesses a high optical transmittance, tight adherence to the light absorbing layer and conformity with the transparent electrode formed thereon even if it would be made of InS material generally possessing a small bandgap and hard to pass light of short wavelengths.